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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,848

07/12/2006

Osamu Funahashi

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04/01/2009

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EXAMINER

LE, HUYEN D

ART UNIT

PAPER NUMBER

2614

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,848	<b>Applicant(s)</b> FUNAHASHI, OSAMU	
	<b>Examiner</b> HUYEN D. LE	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. The indicated allowability of claim 6 is withdrawn. Rejections based on the Nobuo reference follow.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nobuo (JP 09-284886).

Regarding claim 1, Nobuo teaches a diaphragm (1, 3, 7, 11, 13) for a loudspeaker comprising an outer periphery shape defined by a first circle overlapping a second circle (see the circles forming the outer periphery of the diaphragm and the circles in figures 1, 3 and 5). As shown in figures 1, 3 and 5, the first circle has a first center point and a first radius, and the second circle has a second center point which is different from the first center point and a second radius which is different from the first radius.

Regarding claims 2 and 12, Nobuo shows a through hole for fixing a voice coil (2, 12) formed at a center of the diaphragm (1, 11), and the diaphragm having an edge fixing part configured to fix the diaphragm to a loudspeaker frame (5, 15) via an edge (3, 13) as claimed.

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Regarding claims 3-4 and 14, Nobuo shows a through hole for fixing a voice coil (2, 12) formed at a center of the diaphragm (1, 3, 7, 11, 13), an edge fixing part (7) at an outer periphery of the diaphragm, wherein the outer periphery of the diaphragm is substantially circular. As shown in figures 1, 3 and 5, the outer periphery of the diaphragm has a shape defined by a first circle and a second circle that overlap each other (see the circles forming the outer periphery of the diaphragm and the circles in figures 1, 3 and 5) with the center points as claimed. It is inherent that the first circle and second circle of the Nubuo speaker with the center points are positioned such that at least one part of an outer periphery of the first circle and at least one part of an outer periphery of the second circle form a part of the substantially circular outer periphery since the first and second circles form the diaphragm of the speaker.

Regarding claims 5 and 16, Nobuo teaches a loudspeaker comprising a magnetic circuit (4, 14), a cylindrical voice coil (2, 12), a cone-shaped diaphragm (1, 3, 7, 11, 13), a frame (5, 15) and a through hole for fixing the voice coil (2, 12) at a center of the diaphragm as claimed (figures 2, 4, 6), wherein the diaphragm (1, 3, 7, 11, 13) has an outer periphery shape defined by a first circle overlapping a second circle (see the circles forming the outer periphery portion of the diaphragm and the circles in figures 1, 3 and 5), and wherein the first circle has a first center point and a first radius, and the second circle has a second center point which is different from the first center point and a second radius which is different from the first radius.

Regarding claims 6, 9, 10 and 13, as broadly claimed, the diaphragm has a third circle, wherein the third circle surrounds the first circle and the second circle (such as the circles 1, 3, 7, 11 or 13), and the third circle contacts with outer peripheries of the first circle and second circle since the first circle, second circle and third circle form the diaphragm or outer periphery of the

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diaphragm, and wherein the center point of the third circle is a center point to the diaphragm (figures 2, 4, 6).

Regarding claims 7-8, 11 and 15, as broadly claimed, the first circle and the second circle overlap each other (see figures 1, 3, 5) with the center points as claimed, wherein the center points are positioned such that at least one part of an outer periphery of the first circle and at least one part of an outer periphery of the second circle forms a part of the substantially circular outer periphery since the first and second circles form the diaphragm or the outer periphery of the diaphragm of the speaker.

#### ***Response to Arguments***

4. Applicant's arguments filed 12/17/08 have been fully considered but they are not persuasive.

Responding to the arguments about the shape of the diaphragm in Nobuo, the examiner has explained in detail in the Office Action. Nobuo does show the circles forming the diaphragm or the outer periphery of the diaphragm (also see the circles at the periphery of the diaphragm 1, 11, at the edge 3, 13 and the mounting member 7, 7a) having the center points, the first radius and second radius as claimed (figures 1, 3, 5). Since these circles form the diaphragm or the outer periphery diaphragm, these circles overlap each other, and the at least one part of the outer periphery of a first circle and the at least one part of the outer periphery of a second circle form a part of the substantially circular outer periphery of the diaphragm (note the diaphragm with the circles having different diameters).

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Further, the Applicant should also note that the outer periphery of the diaphragm of the Nobuo speaker includes the whole section or a portion at the outer periphery of the diaphragm such as the outer periphery of the cone (1, 11), the edge (3, 13) and the portion of the diaphragm supported by the diaphragm mounting member (7, 7a), not only one circle (7) as argued.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Funahashi et al (US 2003/0185415) teaches a loudspeaker comprising an inner periphery part of a suspension holder (27) that is linked with a middle section between an inner peripheral part and outer periphery part of the diaphragm (17).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CURTIS KUNTZ can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HUYEN D. LE/  
Primary Examiner, Art Unit 2614

HL  
March 29, 2009